AUTHOR INDEX TO THE BULLETIN

Vol. 13, 1934

The reference number in parentheses refers to the *monthly* issue of *The Bulletin;* the number following is the *page* number.

Arbo, Aurelia. See *Smith, K. E.*

Baernstein, M. A. Use of barium compounds as fluxes, (12) 331.
Bookheim, Arnold. Values derived from high-school ceramics, (10) 271–73.
Breeman, L., Jr., and Scholes, S. R. Notes on the J. Lawrence Smith method for alkalis in silicates, (12) 334.
Brown, A. C. See *Brown, E. H.*
Brown, E. H., and A. C., Treatise on the thermometer, (12) 335.
Burch, O. G. Development of a reliable method for the determination of the solubility of soda-lime glasses, (8) 200–204.

Clare, R. L. Discussion of the effect of de-airing on the fired properties of a terra cotta body, (9) 223–24; Standardization of tests for terra cotta bodies and glazes, (12) 333.
Curtis, E. deF. Study of some representative museum pieces, (11) 314–15.

Day, A. L. Natural and artificial ceramic products, (4) 85–95.
Debevoise, N. C. History of glaze and its place in the ceramic technique of ancient Seleucia on the Tigris, (11) 293–300.

Eskesen, E. V. Water-tight terra cotta construction, (6) 154–62.

Faulkner, L. R. Slagging action of fuel-oil ash, (2) 45–46.

Gillett, H. W. A metallurgist looks at ceramics, (5) 117–22.
Goldman, Hetty. The Bronze Age pottery of Greece, (11) 301–308.

Hepplewhite, J. W. Notes on a continuous electric decorating kiln, (2) 44–45.
Hostetter, J. C. Presidential address, 1934, (2) 34–39.
Hull, W. A. New principles of tunnel kiln design applied in a kiln for architectural terra cotta, (8) 196–200.

Jarman, G. W., Jr. Removal of "nonmagnetic" impurities from ceramic materials, (5) 126–29.

Levitt, W. T., Modern Aladdins, (11) 308–15.
Llewellyn, E. F., and Watts, A. S. Effect of refiring on sagger bodies containing Lawrence Co., Ohio clay, (12) 327.
Lovejoy, Ellis. Classification of florescence, (1) 22; Coal requirements of various ceramic ware in firing, (7) 176–78.

Mattson, V. L. Progress in the commercial development of kyanite in south Atlantic states, (9) 226–28.
McVay, T. N. Identification of crystalline substances by means of the petrographic microscope, (10) 255–60.

Palmer, L. A., What Europe knows about the weather resistance of masonry, (12) 328.
Plank, R. D. Origin and manufacture of California's clay roofing tile, (7) 180–83.
Preston, F. W. The mystical number "76," (9) 228; The sacred polariscope, (5) 122.
Purdy, R. C. Ceramic education (3rd editorial), (3) 57–58; (4th editorial), (4) 81–82; Specialization in collegiate education, (5) 115–16.

Richart, F. E. Outline of work of Reinforced Brick Masonry Research Board, (7) 179–80.
Robinson, R. R. Problems of handling air in the ceramic industry, (10) 266–70.
Rogers, G. L. The new Navy simulative service test, (10) 262–64.

Schweitzer, H. V. Automatic glazing in the ceramic industry, (5) 123–26.
Sinel, Joseph. Design impels consumer response, (11) 291–92.
Smith, K. E., and Arbo, Aurelia. Further development of the underglaze color crayon, (2) 40–41.
Stericker, William. Some uses of sodium silicates in the ceramic industries, (10) 264–66.

Thompson, R. M. High-pressure continuous filter press and press, (2) 42–43.

Watts, A. S. American *vs.* European tableware, (6) 153; Reasons for the use of auxiliary fluxes in whiteware bodies, (6) 162–63; see *Llewellyn, E. F.*
Weaver, R. A. An ancient art becomes a modern industry, (4) 95–101.
Wheeler, H. A. The birth of the American Ceramic Society, (4) 82–84.

Zehm, R. C. De-airing process for sewerpipe and conduit manufacture, (9) 224–26.

SUBJECT INDEX TO THE BULLETIN

Vol. 13, 1934

Absorption of light, factors in, defined, (9) 222.
Activities names (names of persons entering into discussions of ceramic interest or contributing through the Society to the interests of the ceramic industry in some definite manner).
Andrews, A. I., book on porcelain enamels, (11) 325; discussion leader on chip-proof enamels, (1) 27.
Austin, C. R., on staff of Battelle Memorial Inst., (5) 143.

Baggs, A. E., honored by Columbus Art League exhibition, (4) 114.
Bailey, James, note on ductile glass, (12) 351.
Bair, G. J., at M.I.T. for graduate work, (8) 215.
Baldwin, W. J., research fellow for O. Hommel Co., (11) 324.
Barringer, L. E., letter on exchange memberships with other organizations, (7) 187; photo (group), (3) 67; tribute to C. B. Harrop, (10) 274.
Bennison, F., on basic principles of ceramic technology in Calif., (8) 208.
Binns, C. F., acknowledges Life Memberships in Society for Charter members, (3) 63.
Blau, H. H., as chairman of Joint Comm. on Illuminating Glasses, (9) 223.
Bleininger, A. V., report of Ceramic Education Comm., (3) 69–71.
Bole, G. A., tribute to C. B. Harrop, (10) 274.
Bopp, H. F., on Art Div. program (photo), (1) 6; photo (group), (3) 67.
Brown, G. H., chairman of Symposium on controlled thermal history of ceramic ware, (9) 232; program for symposium on kiln firing, (12) 346.

Activities names (*continued*)
Burgess, B. C. Spruce Pine mining center to be visited, (4) 104–105.

Cake, B. F., on basic principles of ceramic technology in Calif., (8) 207.
Carder, F. R., life sketch and photo, (1) 5; photo (group), (3) 67.
Carothers, R. B., as chairman of Membership Comm., (9) 229; message to members, (9) 234; photo (group), (3) 67.
Carruthers, J. L., on ceramic education, reply to editorials on, (6) 146; letter on recognition of ceramic engineering as professional group, (11) 322–23.
Chesters, J. H., program contributor, photo, (2) 52.
Clare, R. L., standardization of tests for terra cotta bodies and glazes, (12) 333.
Clemens, E. C., discussion on control of ware firing, (11) 320.
Cohn, W. M., letter on solar eclipse, (2) 52; return from Japan, (5) 143.
Coss, H. T., collection of definitions on heat effects on ceramic materials, (12) 340.
Cox, P. E., in ceramic education symposium, (3) 71; sponsor for American pottery and porcelain display in Iowa, (4) 113.
Curtis, T. S., instructor in ceramic technology at Univ. of Southern Calif., (11) 324; new quarters of research lab. of (photo), (8) 215; outline of basic principles of ceramic technology for study, (8) 207–208;

Day, A. L., at Cincinnati Meeting, (1) 17.

Eldridge, S. E., photo (group), (3) 67.

Activities names (*continued*)
Forshag, W. F., on ceramic minerals as gems, (12) 349.

Garve, T. W., report of Data Comm., (4) 108.
Gillette, H. W., photo and luncheon talk, (2) 49.
Greaves-Walker, A. F., on ceramic education in N. C., (6) 169–70; in ceramic education symposium, (3) 71; president of N. C. chapter of Phi Kappa Phi, (6) 172.
Green, A. P., honorary degree, sketch and photo, (1) 28.

Helser, P. D., report of Membership Comm. (3) 68.
Henderson, H. B., photo (group), (3) 59.
Henry, A. V., president of Ga. Academy of Science, (4) 114.
Henry, F. R., photo, on Administrative Comm., Cincinnati Meeting, (1) 15.
Hepburn, W. M., diffusion combustion and kiln firing, (7) 185.
Herty, C. H., Jr., at Pittsburgh Section meeting, discussion on research, (1) 21.
Holmes, M. E., tribute to P. E. Titsworth, (1) 26.
Horak, William, program contributor, photo, (2) 52.
Horner, H. H., on ceramic graduates as professional engineers, (10) 282, (11) 323.
Hostetter, J. C., on International Commission for Glass Technology, (11) 319; as Ky. "Colonel," glass sword photo, (4) 111; lecture on glass and astronomy, before Amer. Inst. Chemical Eng., (12) 350; on Nov. *Bulletin,* (12) 343; photo (group), (3) 67.
Hull, W. A., in ceramic education symposium, (3) 72.

Activities names *(continued)*
Hurst, T. L., J. C. Steele, Scholarship Cup for, (5) 136.

Kelsey, V. V., comments on Nov. *Bulletin* (12) 343; North Carolina, the feldspar state, (3) 64–66.
Kirk, C. J. Dressler tunnel kiln's early history, (11) 325–26.
Kraner, H. M., on Administrative Comm., Cincinnati Meeting (photo), (1) 15; in ceramic education symposium, (3) 74.
Kriegel, W. W., at Montana State School of Mines, ceramic department of, (11) 323.

La Guardia, Mayor, (N.Y.) on research value of, (1) 30.
Langenbeck, Karl, on meeting of American Federation of Art, (7) 186.
LeChatelier, H., honorary member of American Ceramic Society, (5) 130.
Levitt, W. T., photo and announcement of luncheon talk, (2) 56.
Lindemann, W. C., photo, on Board of Trustees, (4) 106.
Littleton, J. T., nominated for Glass Div. trustee, (12) 349.
Lovejoy, Ellis, on securing equal thermal history, (7) 187; suggestions for ceramic ware firing symposium, (10) 278–79.
Lukens, Glen, on beauty in ceramic ware, (5) 133.

Martin, R., on basic principles of slipmaking, (8) 207.
Mason, M. M., director of N. Y. Ceramic Studios, (1) 28.
McAfee, W. K., photo (group), (3) 59.
McCauley, G. V., work of, on 17-ft. mirror, (4) 95, (6) 172.
McKinley, J. M., photo (group), (3) 59.
Mellor, J. W., Uncle Joe's Nonsense, issued by Ceramic Society of England, (8) 214.
Milener, E. D., on ceramic ware kiln firing, (6) 165–66.
Minton, C. R., speaker at Pacific-Northwest Section, (11) 317.
Montgomery, R. J., in ceramic education symposium, (3) 72.
Morey, G. W., at Cincinnati meeting, (1) 17; on the crystalline form of alumina, (3) 79–80; work of, at Geophysical Laboratory, on glass, (4) 92.
Morrill, J. L., on ceramic education, (5) 132.

Nadai, A., speaker at Pittsburgh Section meeting, (6) 168.
Navias, L., Publications Comm. annual report, (2) 49–50.
Norton, F. H., discussion of ceramic education, (6) 150.

Orton, Mrs. Edward Orton, Jr., pottery group for study, (4) 114.

Parmelee, C. H., on ceramic ware firing, (11) 320–21.
Pence, F. K., on ceramic education, (6) 169.
Perkal, S. I., malleable glass myth, (12) 351.
Podwell, A. H., demonstration of jiggering and molding of bodies, (8) 207.
Pole, Gordon, at Wilson Dam, Ala., (12) 350.
Preston, F. W., in ceramic education symposium, (3) 73.
Purdy, R. C., photo (group), (3) 59.

Rhead, F. H., photo and life sketch, on Board of Trustees, (4) 106.
Richardson, W. D., means of firing ceramic ware, (10) 279–80
Riddle, F. H., in ceramic education symposium, (3) 73.
Ries, H., biographical sketch, and photo, as Orton Fellowship lecturer, (12) 347.
Robson, J. T., affiliated with Ferro Enamel Corp., (5) 138; on ceramic ware firing, (10) 276–78.
Roy, H. N., at Benares Hindu Univ., work of, (9) 233.

Sharp, D. E., comments on Nov. *Bulletin*, (12) 343.
Shaw, T. H., as director of research ceramic laboratory in China, (9) 233.
Sheerer, Mary G., work of, at Newcomb Pottery, (5) 141.
Sherman, R. A., How to obtain uniform thermal treatment, (10) 275–76.
Silverman, A., at chemical conferences in Spain, (4) 110; presents honorary membership to H. Le Chatelier, (5) 130; *vs.* U. S., tariff ruling on art glass of, (1) 29.

Activities names *(continued)*
Sinel, J., life sketch, and Art Div. paper, (1) 7.
Smith, R. W., discussion on progress in commercial development of kyanite in south Atlantic states, (12) 352.
Sosman, R. B., photo and life sketch, on Board of Trustees, (4) 106.
Spencer, C. D., speaker at Pittsburgh Section, (11) 317.
Steinhoff, F. L., Keramos committees named, (11) 325.
Stone, R. L., as teaching fellow at Mo. School of Mines and Metallurgy, (8) 215.
Straight, H. R., on symposium on thermal history of ceramic ware, (9) 232; on uniform thermal history, (7) 187–88.
Suter, W. P., at N.Y. Ceramic Studios, (5) 143.

Taylor, N. W., on symposium on rate phenomena in refractory systems, (11) 323; symposium on refractory systems, rates of change in, factors affecting, (12) 346.
Thompson, F. S., commissioned "Colonel," (1) 28.
Turner, Lois Purdy, tribute to work of, (2) 54.
Turner, W. E. S., honorary member of American Ceramic Society, letter from, (5) 130.

Vail, J. G., Chemical Industry Medal to, (1) 29.
Vollkommer, H. E., studio in Calif., (1) 29.

Waggoner, J. H., biog., fellowship on frits and enamels at Mellon Inst., (3) 80.
Watts, A. P., discussion of, on ceramic ware firing, (11) 321.
Weaver, R. A., on Art Div. program (photo), (1) 6; photo (group), (3) 67; photos of antique enamel collection of, (4) 96, 97, 98, 101.
Westman, A. E. R., on value of Society to Corporation members, (9) 218.
Wilkes, G. B., photo, program contributor, (2) 52.
Willard, A. C., photo of, and note, (5) 143.
Advertising, in American Ceramic Society publications, value of, to members, (8) 210.
Air, density of, effect of water vapor on, (10) 267.
drying of, (10) 269.
flow of, formula for; ventilation, (10) 267.
heating, cooling, and dust removal in, (10) 268.
moving of, methods for, (10) 270.
problems in handling of, data on, (10) 266.
velocity of: formula for, (10) 270; precipitations of, table on, (10) 269.
weight, volume, specific heat, and moisture capacity of, (10) 266.
Alfred University. See *Ceramic Schools, New York State College of Ceramics.*
Alkalis in silicates, J. Lawrence Smith test for, notes on, (12) 334.
Alumina, crystalline form of, (3) 79.
American Assn. for Advancement of Science. See *Societies, technical.*
American Ceramic Society, audit report for 1933, (2) 53; comparative income and expense statement, 1931–33, (2) 54.
benefits and services of, (1) 1; benefits of, letters on, (9) 230.
birth of, story of, by H. A. Wheeler, (4) 82.
Board of Trustees, (3) 60; photos and life sketches of F. H. Rhead, W. C. Lindemann, and R. B. Sosman, (4) 106.
Constitution of, on Editorial Comm., changes in, (2) 50.
dues for, $12.50, (10) 285.
exhibits. See *Exhibits.*
Fellows of: Comm. on Education and Awards named, (12) 349; Comm. on Honorary Members, (3) 63; editor's letter on ceramic education, (3) 74; president's review of, (2) 36; resolutions on death of C. B. Harrop, (10) 274; resolutions on death of E. W. Washburn, (3) 78; Ries, H., as Orton lecturer at Buffalo meeting, (12) 347.
finances of, review by president, (2) 38.
honorary members in: certificate to H. Le Chatelier, life history of, (5) 130; Dr. Day, Dr. Mellor, Dr. Schott, and Dr. Turner, (4) 106.
induction of officers for 1934–35, (3) 59.
key emblem for, (2) 37.
meetings of. See *Meetings;* also *Divisions; Local Sections; Societies, technical.*
objects of, and status of publications in, (9) 217.

American Ceramic Society *(continued)*
officers of. See *Official personnel.*
publications of, as advertising mediums, (9) 231. See also *Publications.*
registration fees at Annual Meetings, how spent, (4) 112.
selfishness as motive for interest in, (11) 316.
services of, (9) 230–32.
urges support of Bur. Stand., (6) 168.
American Federation of Art. See *Societies, technical.*
American Institute of Chemical Engineers. See *Societies, technical.*
American Standards Assn. See *Societies, technical.*
Andrews Steel Co. See *Manufacturers, Newport Rolling Mill Co.*
Archeology, Babylon and Assyria, ancient glazed brick of, (11) 296.
Greece, bronze age of pottery in, (11) 301.
history of glaze, effect of, on ceramic technique in ancient Seleucia, (11) 293.
Art, American Federation of, meeting of, relation of, to American Ceramic Society, (7) 186.
of enameling, history of, (4) 85.
industrial, Metropolitan Museum to show American industrial design, (8) 216.
Persian, survey of, book by A. U. Pope, (5) 144.
Art schools. See *Ceramic schools; Studios.*
Ash, fuel-oil, slagging action of, (2) 45; slag data on absorption and volume loss of, (2) 46.
Audit report of American Ceramic Society, 1933, (2) 53; comparative income and expense statement, 1931–33, (2) 54.
Autoclave test for solubility of glass surfaces, (8) 202.
Awards, Charles B. Dudley Medal to R. L. Templin, (6) 173.
Chemical Industry Medal to James G. Vail, (1) 29.
Edward Orton, Jr. Medal, resolution covering proposed medal, (3) 59.
Moland-Drysdale Cup to A. R. Blackburn, (5) 136–37.
Natl. Ceramic Exhibition pottery prize to Edgar Littlefield, (6) 172.
J. C. Steele Scholarship Cup, to T. L. Hurst, Univ. of N. C., (5) 136.

Barium as bonding agent for silica brick, (12) 331; types of, for electric furnace use, (12) 332.
Barium compounds as fluxes, (12) 331.
Barium fluxes for electric furnaces, methods for use of, (12) 332; in slag, use of, (12) 331.
Battelle Memorial Inst. See *Research laboratories.*
Baumgartner, H. H. See *Necrology.*
Bautz, R. A. See *Necrology.*
Benares Hindu Univ. See *Ceramic schools.*
Bibliographies, on crystalline substances, identification of, references on, (10) 257.
glass, American, (10) 289–90.
list of publications by C. B. Harrop, (10) 286.
silicosis, (6) 174.
Bonding agents, barium, for silica brick, (12) 331.
Books, handbook on terra cotta construction, (6) 159.
Minerals Yearbook, U.S. Bur. Mines, (11) 326.
Persian Art, survey of, by A. U. Pope, (5) 144.
Porcelain Enamels, by A. I. Andrews, (11) 325.
Potter's Art, by Cipriano Piccolpasso, (6) 172.
Uncle Joe's Nonsense by J. W. Mellor, (8) 124.
Brick. See also *Clayware.*
discussion on, at home building conference, Univ. of Ill., (1) 27.
glazes for, ancient, history of, (11) 296.
reinforced masonry. See *Masonry, reinforced.*
Bronze age, pottery of, in Greece, cycles of, (11) 301–308.
Bucknell Univ. See *Research laboratories.*
Building, home, in Ill., conference on, (4) 114.
Bulletin, The (of the American Ceramic Society). See *Publications.*
Bureau of Standards. See *Research laboratories.*

Calcination, defined, (12) 343.
Calcine, defined, (12) 343.
California, ceramists of, problems for, basic principles of, (8) 207–208; roofing tile in, origin and manufacture of, (7) 180.

California Local Section. See *Local Sections.*
Canadian Ceramic Society. See *Societies, technical.*
Carnegie Inst. of Technology. See *Research laboratories.*
Casting, sodium silicates for, use of, (10) 265.
Ceramic Assn. of New Jersey. See *Societies, technical.*
Ceramic data, fundamental, in *Ceramic Abstracts,* recommendation, (3) 61.
Ceramic education. See also *Ceramic engineers; Ceramic schools.*
American Ceramic Society qualifications to discuss curricula, (1) 2.
annual report of Comm. on, by A. V. Bleininger, (3) 69–71.
in Calif., problems and solution for, (8) 207; basic principles of ceramic technology, (8) 208.
Carruthers, J. L., on, (6) 146.
ceramic graduates, activities of, in the Society, *vs.* other technical graduates, (1) 2.
collegiate: 2nd editorial in honor of 40th anniversary of founding of first collegiate school of ceramics in America, (2) 31; 3rd, (3) 57; 4th, (4) 81.
curricula for undergraduates, (1) 2.
editor's letter to Dean Hitchcock on, (3) 75.
fundamental studies *vs.* applied subjects, (1) 2; fundamental sciences, teaching methods for, (6) 147–48.
fundamentalist *vs.* technician, F. H. Norton on, (6) 150.
fundamentals and curricula for, recognition as professional engineers, (10) 281.
high-school ceramics, value in, (10) 271.
Morrill, J. L., on; reply of Secretary, (5) 132.
relation of, to work of Fellows of the Society, (3) 74–75.
specialization in collegiate education, (5) 115.
Staley, H. F., letter on, (5) 133.
symposium on, by A. F. Greaves-Walker, P. E. Cox, R. J. Montgomery, W. A. Hull, F. W. Preston, F. H. Riddle, and H. M. Kraner, (3) 71–74.
Ceramic engineers. See also *Ceramic education; Ceramic schools.*
classification of graduates of collegiate ceramic schools, (10) 261.
definition of "professional" engineers, (10) 282; recognition of, as professional engineers, data on, (10) 281; letter to H. H. Horner, (11) 322; reply of H. H. Horner, (10) 282.
Keramos, national professional fraternity of, committees of, (11) 325.
Ohio recognition of, as professional group, (11) 323.
Ceramic Foundation, Edward Orton, Jr. See *Research laboratories.*
Ceramic industry, air problems in, data on, (10) 266.
effect of lowered production and higher production costs on, (11) 326.
sodium silicates for, uses of, (10) 264.
Ceramic lectures, Los Angeles Woman's Club as sponsors for, (10) 288.
Ceramic materials, artificial and natural, (4) 85.
heat effects on, definitions pertaining to, (12) 340–43.
"nonmagnetic" impurities in, removal of, (5) 126.
uses for, viewed by a metallurgist, (5) 117–22.
Ceramic research. See *Research; Research laboratories.*
Ceramic schools. See also *Ceramic education; Ceramic engineers; Studios.*
Benares Hindu Univ., ceramic technology courses at, (9) 233.
in China, research at, (9) 233.
collegiate, classification of graduates of, as ceramic engineers, (10) 261.
Georgia School of Technology, Student Branch, need of organization, (4) 109.
high-school ceramics, suggested courses for, and value of, (10) 271.
for industrial art design, suggestions for, (11) 292.
Iowa State College: Clay Products Short Course, list of lectures, (1) 27; Hodgdon, F. B., fellowship for study of thermal history of Iowa clays, (11) 322; summary of work at, (4) 109–10; tests on effect of thermal history on Iowa Clay in firing, (10) 280.
Keramos, professional ceramic fraternity: annual meeting of, officers of, (3) 66; committees on, Steinhoff, F. L., president of, (11) 325.
Massachusetts Institute of Technology, notes from, (4) 113.
Ceramic schools *(continued)*
Montana State School of Mines, ceramic department at, W. W. Kriegel at, (11) 323.
New York State College of Ceramics: photo, 1934 graduating class, (5) 138; summer school courses at, (5) 135; Student Branch: summary of work of, (4) 109; officers of, (5) 137; meeting of, President McAfee at, (5) 138.
Ohio State University: alumni news of, (5) 137; Engineering Experiment Station fellowships at, (11) 324; graduates of, positions of, (8) 215–16; qualifications of staff to discuss education, (6) 146; Student Branch: officers for 1934; Nov. meeting, speakers, (1) 26; summary of work of, (4) 110.
Pennsylvania State College: Advisory Comm. for, on ceramics, (10) 289; Bair, G. J., on leave of absence, (8) 215; ceramists to support ceramics at, (7) 192; refractories research problems at, (7) 189; Student Branch: photo of, and notes on meetings of, (5) 136.
Rutgers Univ., Student Branch: officers of, Nov. and Jan. meeting speakers, (1) 21; summary of work of, (4) 110.
School of Mines and Metallurgy, Rolla, Mo.: Stone, R. L., as teaching fellow at, (8) 215; Student Branch: officers of, advance programs of, (1) 21; report of, (2) 55; summary of work, (4) 110.
Student Branches: annual report of E. P. Poste on, (4) 109; résumé of work, by E. P. Poste, (2) 55–56; student reception for, at Cincinnati meeting, list attending, (3) 77; summary of work of, by E. P. Poste, (4) 110.
University of Alabama, refractories research problems at, (7) 189.
University of Cincinnati, Art Dept. invitation to ceramists, (1) 6.
University of Illinois: Ceramic Dept. adds administration option, (2) 56; Conference on Glass Problems at, (6) 167, (7) 192, (9) 233, (10) 290, (11) 317; Enamel Short Course at, list of lectures, (1) 27; home building conference, brick industry in, (1) 27; Short Course in structural clay products, (1) 27; Student Branch: report of, (2) 56; summary of work of, (4) 110.
University of North Carolina, State College of Agriculture and Engineering at Raleigh: ceramic curricula at, (10) 281; ceramic engineers win honors at, (5) 136; letter from A. F. Greaves-Walker on education at, (6) 169–70; Student Branch: officers of, (1) 21.
University of Southern California, new ceramic courses at, (11) 324.
University of Washington, graduates from and positions, (11) 323; refractories research problems at, (7) 189; Student Branch: report and officers, (2) 55.
West Virginia Univ., summer courses in practical pottery at, (6) 168.
Ceramic technology, basic principles of, studies outlined by California Section, (8) 207–208.

Ceramic trade papers, importance of, to ceramic progress, (10) 261.

Ceramic ware, beauty in, need for, in America, (5) 133.
continuous electric decorating kiln for, (2) 44.
defects in, resulting from uneven firing, (8) 211.
equal thermal history essential for uniform and definite properties of ceramic ware, (7) 175; production economy and better ware quality, suggestions for, (6) 151–52; uniform thermal treatment of, (10) 275.
firing of: accurate control of, (11) 320; coal requirements for, (7) 176; discussion by Lovejoy, E., (10) 278–79; discussion by Milener, E. D., on, (6) 165; reply by General Secretary, (6) 166; discussion by Richardson, W. D., (10) 279–80; discussion by Robson, J. T., (10) 276–77; discussion by Sherman, R. A., (10) 275; discussion by Watts, A. P., (11) 321–22.
product development in, note on, (12) 350.
symposium on, C. H. Parmelee discussion on, (11) 320; symposium on, program outline for, (12) 346.

Ceramics, ceramists must be service-minded, looking ahead, (4) 84.
design in, effect of, on consumer response, (11) 291.
etymology of word, (10) 271.
Ceramics *(continued)*
product development and promotion as work of ceramic research men, (8) 214.
technique of, in ancient Seleucia on the Tigris, history of glaze in, (11) 293.
as viewed by a metallurgist, (5) 117.
Charter members of Society. See *Members, Charter.*
Chemical Abstracts. See *Publications.*
Chemical apparatus, glass, production of, (11) 313.
Chemical durability of glass, symposium papers listed on, (8) 205; problem for International Comm. for Glass Technology, (8) 206.
Chemical Industry Medal. See *Awards.*
Chicago Enameler's Club. See *Local Sections, Chicago.*
Chinaware. See *Tableware.*
Cincinnati Art Museum. See *Museums.*
Classifying of ceramic materials, induction magnetic separator for, (5) 126.
Clays, fired, de-airing of, effect on fired properties of, (9) 223.
Iowa, effect of thermal history on firing of, (10) 280, (11) 322.
Lawrence Co., Ohio, for sagger bodies, effect of refiring on, (12) 327.
suspensions of, filter press, high-pressure, continuous, (2) 42.
Clayware. See also *Masonry; Terra cotta.*
clay products short course at Iowa State Coll., list of lectures, (1) 27; short course at Univ. of Ill., (1) 27.
crystallization of salts on: classification of florescence, cryptoflorescence, inflorescence, and scum, (1) 22.
de-airing apparatus, types of, process for, (9) 225.
roofing tile: in Calif., origin and manufacture of, (7) 180; machine-made, glazed, colors for, (7) 182; designs for, (7) 183.
sewer pipe: and conduits, de-airing process for, (9) 224; thermal control in firing of, (11) 320.
structural, discussion at home building conference, (4) 114.
tile, interlocking, first plant in U.S., (7) 181.
Coal. See *Fuels.*
Colors for glazes, types of, (11) 315.
for roofing tile, (7) 182.
underglaze crayon, use of, (2) 40.
Combustion, diffusion, cited from report of Comm. on Industrial Gas Research, (7) 184.

Committees. See also *Official personnel.*
Advisory Industrial, on Whiteware, to Bureau of Standards, minutes of, (8) 212.
Buffalo Meeting, executive comm. for, and plans of, (10) 285, (12) 345.
on chemical durability of glass, members of, (11) 319.
Data, progress report on, (4) 108.
Data (Refractories Div.): report of, (3) 61; Williams, F. J., chairman of, (7) 189.
Data, Standards, and Research, coöperation of, with problems studied by International Comm. for Glass Technology, (8) 206.
Editorial, Division, Constitution changes for, (2) 50.
Education, Ceramic: report of, (3) 69–71; of Calif. Section, discussion and outline of basic principles of ceramic technology, (8) 207–208.
Electro-Ceramic Research, personnel of, (7) 189.
Enamel Division: on Data, Standards, Membership, Statistics, and Councillors, chairmen named, (7) 189; subcommittee on standard methods for analysis of enamels and enamel materials, (10) 286.
Geological Surveys, report of, (2) 50–51.
on Honorary members of Society, (3) 63.
Joint Comm. on Illuminating Glasses (Glass Div.), report of, with Illuminating Engineering Soc., and Illuminating Glassware Guild, (9) 219; members of, (9) 223.
Membership: annual report of, P. D. Helser, chairman, (3) 68; R. B. Carothers, as chairman of, (9) 229; display page on record of, (12) 348; graphic representation of increase in, (11) 318; message to members, on prospects, (9) 234; "Win with Wisdom" messages, (1) 23, (1) 24.
for 1934–35, (5) 134; errata, N. W. Taylor, Refractories Div., Papers and Program Comm.; D. W. Ross, Data Comm.; Enamel Div., additional names, (7) 189.
Nominating: Comm. A, for 1935–36 officers, (11) 317; Comm. B, officers for, (10) 286; (Enamel Div.), report on officers for 1934–35 (1) 23.

Committees (*continued*)
Orton, Edward, Jr. Medal, resolutions of proposed medal, (3) 59–60.
for Penn State Ceramic Dept., advisory, (10) 289.
Publications: annual report of, (2) 49; and Division Editorial, minutes of combined meeting of, (4) 107.
Refractories Div., errata: N. W. Taylor, Papers and Program Comm.; D. W. Ross, Data Comm., (6) 174.
Reinforced Brick Masonry Board, members of, and research work, (7) 179.
Research, of Refractories Div., 1933 report of, (7) 188.
Sections and Divisions, annual report of, (4) 109–10.
Standards, White Wares Div., report of, (3) 61.
Conduits, production of, effect of de-airing process on, (9) 224.
Constitution, American Ceramic Society. See *American Ceramic Society, Constitution of.*
Corhart Refractories Co. See *Manufacturers.*
Corning Glass Works. See *Manufacturers.*
Corporation members, American Ceramic Society. See *Members, Corporation; Members, geographic roster.*
Corrosion resistance of glass, symposium on, (8) 205.
Crayon, color, underglaze, use of, (2) 40.
Cryptoflorescence, classification of, (1) 22.
Crystalline form of alumina, (3) 79.
Crystalline substances, identification of, by petrographic microscope, (10) 255.
Crystallization of salts on clayware: classification of florescence, efflorescence, cryptoflorescence, inflorescence, and scum, (1) 22.
Crystal structure, research on, as aid to uniform thermal history, (7) 187.
Cyanite. See *Kyanite* (as preferred spelling).

Data Committee. See *Committees, Data.*
De-airing for sewer-pipe and conduit manufacture, process for, (9) 224; of terra cotta body, effect of, on fired properties of, (9) 223.
De-airing apparatus, types of, and process for, (9) 225.
Decoration. See also *Design; Glazes.*
of ceramic ware, photocolor process for, (12) 347.
continuous electric kiln for, notes on, (2) 44.
spraying of glazes for, (5) 124.
Definitions, on glass, illuminating; light, brightness, etc., (9) 221.
on heat effects on ceramic materials, (12) 340–43.
porcelain, china, semichina, and fine earthenware, (5) 131.
whiteware, terminology of ceramic whiteware, (5) 131.
Deformation, defined, (12) 341.
Deformation point or softening point, defined, (12) 341.
Design in ancient pottery, (11) 302–308.
ceramic, effect of consumer response, (11) 291.
industrial, American, at Metropolitan Museum of Art, (8) 216.
for museum pieces, study of, (11) 314.
Diffusion, light, in glass, general conceptions of, (9) 219.
Diffusion combustion. See *Combustion.*
Divisions. See also *Committees; Officers.*
general review of work of, (2) 35; annual report of general chairman of, (4) 110.
Editorial Comm. of, minutes of meeting of, (4) 107.
Art: advantage of exchange membership with other organizations, L. E. Barringer on, (7) 187; at Cincinnati Meeting, program features of, (1) 5–7; officers of, (3) 60; official personnel, (5) 134.
Enamel, at Cincinnati Meeting, officers and technical program of, (1) 8.
Editorial Comm. of, procedure of, (4) 107.
Nominating Comm. report, (1) 23.
officers of, (3) 60; official personnel, (5) 134; additional names, (7) 189; officers for 1935, (12) 349.
Subcommittee on Standards, methods for analysis of enamels and enamel materials, (10) 286.
summer meeting plans of, (8) 206.
Glass, at Cincinnati Meeting, additional program titles, (1) 7.
Comm. on chemical durability of glass, members of, (11) 319.
Editorial Comm. of, procedure for, (4) 107.
endorses problem of weathering of glass
Divisions, Glass (*continued*)
studies by International Comm. for Glass Technology, (8) 206.
officers of, (3) 60; official personnel, (5) 134; summer meeting of, (7) 184; program and map of Lake Keuka country, (8) 205; as means for membership prospects, (10) 284; group photo of, (10) 287; roster of, (10) 288.
Trustee nomination, J. T. Littleton, (12) 349.
Materials and Equipment: officers of, (3) 60; official personnel, (5) 134.
Refractories, annual meeting minutes of (4) 108.
Cincinnati Meeting, officers and technical program for, (1) 9.
Data Comm., report of, (3) 61; F. J. Williams, chairman of, (7) 189.
Editorial Comm. of, procedure of, (4) 107.
officers of, (3) 60; official personnel, (5) 134; additional names, (7) 189.
papers listed for 1935 meeting, (12) 347.
research Comm. report for 1933, (7) 188.
Structural Clay Products: at Cincinnati Meeting, officers and technical program of, (1) 13; Editorial Comm. of, procedure of, (4) 107; officers of, (3) 61; official personnel, (5) 134.
Terra Cotta: officers of, (3) 61; official personnel, (5) 134.
White Wares: at Cincinnati Meeting, officers and technical program of, (1) 14.
Editorial Comm. of, procedure of, (4) 107.
Industrial Advisory Comm. on Whiteware to Bur. Stand., (8) 212.
officers of, (3) 61; official personnel, (5) 134; officers for 1935–36, (10) 286, (12) 349.
Standards Comm., report of, (3) 61.
Dressler tunnel kiln. See *Kilns, tunnel.*
Ductile glass. See *Glass.*
Dusts in air, measurement of, (10) 268.

Earthenware, types of, definitions of, (5) 131.
Economics, American Ceramic Society, services rendered and policies of, (1) 1.
Edgar, D. R. See *Necrology.*
Editor. See *Editorials; Letters, General Secretary-Editor.*
Editorials, American *vs.* European tableware, (6) 153.
Appeal of this Society to those who can not read the *Journal,* (9) 217.
Birth of the American Ceramic Society by H. A. Wheeler, (4) 82.
Ceramic education (2nd), in honor of 40th anniversary of founding of first collegiate school of ceramics in America, (2) 31; (3rd), (3) 57; (4th), (4) 81; by F. H. Norton, (6) 150.
Comments on ceramic education by J. L. Carruthers, (6) 146.
Curricula for undergraduates, (1) 2.
Design impels consumer response, by J. Sinel, (11) 291.
Economy and effectiveness in applied science instruction, (2) 33.
Equal thermal history essential to secure uniform and definite properties of ceramic ware, (7) 175.
Greater production economy and better ware quality suggestions, (6) 151–52.
Holiday greetings, (12) 340.
Identification of crystalline substances by means of the petrographic microscope, (10) 255–60.
Importance of ceramic trade papers to ceramic progress, (10) 261.
Inadequacy to express appreciation for abundance of good will, (3) 58.
"Land of the spree and home of the crave," (1) 1.
Looking ahead, (4) 84.
A metallurgist looks at ceramics, (5) 117.
Offer to those who joined the American Ceramic Society after Aug. 1, (9) 218.
Orton, Edward, Jr., Ceramic Foundation, (6) 145.
Our Annual Meeting, (3) 58.
Presidential addresss, 1934, (2) 34.
The sacred polariscope, (5) 122.
Selfishness prompts persons to active interest in Society, (11) 316.
Specialization in collegiate education, (5) 115.
Uniform thermal history, (8) 193.
Westman shows how American Ceramic Society benefits Corporations, (9) 218.
What variation in ceramic thermal treatment is allowable and what is unavoidable, (8) 194.
Education. See also *Ceramic education; Ceramic schools.*
Education (*continued*)
engineering, economy and effectiveness in applied science instruction, (2) 33.
Efflorescence, classification of, (1) 22.
Egypt, glaze development in, history of, (11) 293.
Electro-Ceramic Research Comm. See *Committees.*
Enameler's Club, Chicago District. See *Local Sections, Chicago.*
Enamels, art, types of, (4) 96.
and frits, research on, at Mellon Inst., (3) 80.
porcelain: ancient art of, as modern industry, history of, (4) 95; book on, by A. I. Andrews, (11) 325; display of Porcelain Enamel Institute at Century of Progress, (5) 144.
short course on, at Univ. of Ill., list of lectures, (1) 27.
sodium silicate for, data on, (10) 264.
spray method for, and machine for, (5) 125.
standard methods for analysis of enamels and enamel materials, subcommittee on, (10) 286.
study course of Ferro Enamel Corp., date for, (4) 114.
symposium of Chicago Enameler's Club, (1) 27.
Engineering, *Applied Mechanics,* new journal on, (11) 326.
ceramic. See *Ceramic engineering.*
Engineers, professional, definition of, (10) 282.
Equilibrium diagrams. See also *Phase rule.*
phase, large-scale, (4) 109.
value of, in metallurgy, (5) 121.
Exhibits, American Ceramic Society offices, Federal Glass Co., Homer Laughlin China Co., Shearwater Pottery, and Newcomb Pottery, (5) 132.
Expansion of mortars, discussion on, (12) 330.
Expositions, Century of Progress: ceramic ware manufactured at; Indian pottery; Haeger pottery; porcelain enamel and glassware at, (5) 144; antique glass collection at, (9) 233; primitive glassworking demonstration at, (10) 290.

Federal Glass Co. See *Manufacturers.*
Feldspar in N. C., plants to be visited, (3) 64.
Feldspar plants, photos of, (2) 47–48; mines in Spruce Pine, N. C., story on, (4) 104–105.
Fellowships at Ohio State Engineering Experiment Station, (11) 324.
Ferro Enamel Corp. See *Manufacturers.*
Filter press, high-pressure continuous, (2) 42.
Firing of ceramic ware: coal requirements for, (7) 176; equal thermal history essential for uniform and definite properties of, (7) 175; uniform thermal history in, study of crystal structure as aid to, (7) 187–88; uniform thermal history, (8) 193; discussion on, (10) 275.
of kilns in 16th Century, description of, (12) 350; uneven, defects resulting in, (8) 211.
letter from E. D. Milener on, (6) 165; reply by General Secretary, (6) 166; securing equal thermal history, letter on, from Ellis Lovejoy, (7) 187.
production economy and better ware quality, suggestions for, (6) 151.
rapid heat transfer and uses of diffusion flame combustion, report on, (7) 184.
symposium on, Parmelee, C. H., discussion of, (11) 320–21; Watts, A. P., discussion on, (11) 321–33; symposium outline, (12) 346.
of sagger bodies with Lawrence Co., Ohio, clay in, effect of refiring on, (12) 327.
Florescence, classification of, (1) 22.
Fluids, measurement of, symbols for, (7) 189–92.
Fluxes, auxiliary, in whiteware bodies, reasons for, (6) 162.
barium, in slag, use of; barium compounds as, (12) 331; defined, (12) 342.
Forst, A. D. See *Necrology.*
Foundry Congress. See *Societies, technical.*
Frigidaire plant. See *Manufacturers.*
Frits, artificial auxiliary, object of, (6) 162; composition for, (6) 163.
defined, (12) 343.
research on, at Mellon Inst., (3) 80.
Fuel-oil ash. See *Ash.*
Fuels, coal, requirements of, in ceramic ware firing, (7) 176.
Furnaces, electric, flexibility of, linings for, data on metals, effect of barium flux on, (12) 331.
Navy, construction of, (10) 264.
test, for slagging action of fuel-oil ash, (2) 46.

Fusion, definition of, (12) 341; incipient fusion, defined, (12) 342.

Gases, combustion, in firing, studies on, (7) 177.
General Secretary. See also *Editorials*; *Letters, General Secretary-Editor.*
appreciation of gift car, (3) 58; holiday greetings to members, (12) 340.
Geophysical Laboratory, historical sketch and photos of, (1) 17–20.
Geographic roster of members of Society, (9) 234–54.
Geological Survey. See *Committees.*
Geology, research work of State Geological Surveys, (2) 50–52.
Georgia School of Technology. See *Ceramic schools.*
Glass, American, exhibit of, in Iowa, (10) 289.
antique, at Century of Progress Exposition, data on, (9) 233.
artistic, production of, (11) 313.
bottles, thermal-shock tests on, (9) 228.
bulbs of, production of, (11) 308–309.
for chemical apparatus, production of, (11) 313.
chemical durability of, committee on, (11) 319.
conference on problems in, at Univ. of Ill., program for, (6) 167–68, (9) 233.
diffusing, mat and "cloudy," (9) 220.
ductile, note on, (12) 351.
entomological reproductions of, (11) 311–12.
Farrah, primitive glassworking methods, (10) 290.
finishes for, by spraying glazes, (5) 125.
foreign papers on, translation service of Society, (4) 110.
glass eyes, production of, (11) 312.
for hydrometers, production of, (11) 311.
illuminating: classification of, (9) 219; nomenclature of, study of, report on, (9) 219, (9) 222; properties of, tests and data on, (9) 219.
International Comm. for Glass Technology, A (8) 205; J. C. Hostetter, American representative of, (11) 319.
lamps for Christmas trees, production of, (11) 310.
lampworkers, defined, (11) 308.
light-diffusing, general conceptions of, (9) 219.
Lipari, natural glass, (4) 89.
malleable, myth of, (12) 351.
materials for, natural and artificial, (4) 85.
mirror, 200-inch disk, apparatus for, and methods, (4) 93–95; G. V. McCauley's work on, (6) 172.
"mystic number 76," meaning of, (9) 228.
in nature, types of, where found, (4) 88–90.
neon signs, production of, (11) 309.
optical, work of G. W. Morey on, (4) 91.
papers on problems in fuels and heating apparatus for, (11) 317.
powdered or ground, solubility tests on, (8) 202.
primitive, demonstration of production of, at Century of Progress, (10) 290.
Pyrex-brand, for 17-ft. mirror, (4) 95.
soda-lime, solubility of, method for determination of, (8) 200.
sodium silicates for, use of, (10) 265.
solubility tests for: requirements of, and control test for, (8) 203; of ware surface, tests on, (8) 201.
sword of, for Col. Hostetter, photo of, (4) 111.
symposium on chemical durability and corrosion resistance of glass, (8) 205.
for thermometers; production of, (11) 310–11; treatise on, (12) 335–39.
translation of foreign papers on, Society service of, (4) 110.
volcanic types of, where found, (4) 86.
weathering of, as problem for International Comm. for Glass Technology, (8) 206.
Yellowstone, natural, (4) 88.
Glazes, automatic machine for the ceramic industry, circular and straight-line conveyer for, (5) 123.
for brick, ancient, history of, (11) 296.
Chinese, study of, composition of, (11) 314.
copper red, body composition, (11) 314; glaze composition, (11) 315.
decoration by spraying of, (5) 124.
history of, place of, in ceramic technique of ancient Seleucia on the Tigris, (11) 293.
in India, ancient, composition of, (11) 294.
manganese, composition for, at Seleucia, (11) 299.
paste, ancient recipe for, (11) 295–96.
for pottery, ancient, history of, (11) 297.
Sasanian, data on, (11) 297.
Seleucian, relation of, to Chinese, (11) 299.
Glazes *(continued)*
sodium silicate for, use of, (10) 265.
tests for, standardization of, (12) 333.
transparent, composition for, (2) 41.
under-, color crayon, further development of use of, (2) 40.

Haeger Pottery. See *Potteries.*
Harbison-Walker Refractories Co. See *Manufacturers.*
Harrop, C. B. See *Necrology.*
Heat transfer, symposium on, (3) 67, (12) 346.
Homer Laughlin China Co. See *Manufacturers.*
Hommel, O., Co. See *Manufacturers.*
Howell, W. A. See *Necrology.*
Hydrometers, glass for, production of, (11) 311.

Illinois Glass Conference. See *Meetings.*
Illuminating Engineering Society. See *Societies, technical.*
Illuminating glass. See *Glass.*
Illuminating Glassware Guild. See *Societies, technical.*
Incipient fusion or incipient vitrification, defined, (12) 342.
Induction of officers of Society. See *American Ceramic Society, induction.*
Industrial design in ceramics, needs for, (11) 291.
Inflorescence, classification of, (1) 22.
Insulators, spraying apparatus for, (5) 125.
International Commission for Glass Technology. See *Societies, technical.*
Iowa, clays of, thermal history studies on, (11) 322.
Federated Women's Clubs in, American pottery and porcelain display of, (4) 113; sponsor for glass exhibit; bibliography on American art glass, (10) 289.
Iowa Clay Products Mfrs. See *Societies, technical.*

Jacobs, W. M. See *Necrology.*
Journal of Applied Mechanics. See *Publications.*

Kaolin, Washington, tests on, (2) 43.
Keeler, R. B. See *Necrology.*
Keramos. See *Ceramic schools, Keramos.*
Kilns, combustion in, uniform thermal treatment in, (10) 275.
cooling, recirculation in, and heating from the bottom in, (8) 197.
electric decorating, continuous, notes on, (2) 44.
for firing architectural terra cotta, design for, (8) 196.
heating from top, heating bottom ware, cooling, and kiln dimensions, (8) 198.
oxidation and sulfur removal in, (8) 196.
for pottery in ancient Mesopotamia, (11) 298; for artistic pottery, (11) 315.
tunnel: Dressler, early history of, by **Kirk,** C. J., (11) 325; kiln performance, data on, (8) 199; types of, (8) 196.
Kyanite, commercial development of, in south Atlantic states, (9) 226; discussion on, (12) 352.
mining of, in N.C., (4) 104–105.
uses, geologic development, and process for, (9) 226–28.

Lamps. See also *Glass.*
Lampworkers, definition of, and work, (11) 308.
Lava Crucible Co. See *Manufacturers.*
Life Membership in Society. See *Members, Life Membership.*
Letters, Barringer, L. E., on "exchange memberships" with other organizations, (7) 187.
Curtis, T. S., on Calif. proposed solution for ceramic study, (8) 207.
General Secretary-Editor, on benefits of American Ceramic Society, (9) 230.
to Board of Visitors, O.S.U., on economy and effectiveness in applied science instruction, (2) 33.
on ceramic education, reply to Morrill, J. L., (5) 133.
as character mirror, (8) 210.
to Fellows, on ceramic education, relation of, to Fellows, (3) 74.
to Hartford, F. M., on defects resulting from uneven firing, (8) 211.
to Hepburn, W. M., on kiln firing and diffusion combustion, (7) 185.
to Hitchcock, E. A., on analysis of papers on 1934 program, (3) 75.
to Horner, H. H., on status of ceramic engineers, (10) 281; reply of Horner, (10) 282.
Letters, General Secretary-Editor *(continued)*
on membership and advertising push, reasons for, (10) 284–85.
to Milener, E. D., on ceramic ware kiln firing, (6) 166.
Greaves-Walker, A. F., on ceramic education in N.C., (6) 169–70.
Hepburn, W. M., on kiln firing and diffusion combustion, (7) 185.
Langenbeck, Karl, on American Federation of Arts meeting, (7) 186.
Lovejoy, Ellis, on securing equal thermal history, (7) 187.
Lukens, Glen, on beauty in ceramic ware, (5) 133.
Milener, E. D., on ceramic ware kiln firing, (6) 165.
Morey, G. W., to R. E. Birch on crystalline form of alumina, (3) 79.
Morrill, J. L., on ceramic education, (5) 132; reply by General Secretary, (5) 133.
Pence, F. K., on ceramic education, (6) 169.
Staley, H. F., on ceramic education, (5) 133.
Straight, H. R., on uniform thermal history, (7) 187–88.
Light and brightness, definitions of, (9) 221.
Local Sections, annual report of chairman of, (4) 109.
Baltimore-Washington: April meeting of, F. Brackett at, (6) 167; Dec. meeting of, W. F. Forshag and W. E. Reid speakers at, (12) 349; summary of meetings of, (4) 109.
California: ceramic technology, problems and basic principles in, (8) 207–208; May meeting of, at Atheneum of Calif. Inst. of Tech., (6) 167; program schedule for 1934, (3) 79; summary of organization, (4) 109; summer meeting of, (9) 233; work of, Los Angeles Women's Club sponsors ceramic lectures, (10) 288.
Chicago (joint meetings with Chicago Enameler's Club): Chicago Enameler's Club Symposium, (1) 27; problems of Chicago Section; summary of work of, (4) 109;
Michigan-Northwestern Ohio: April meeting, paper by H. M. Christman and H. R. Orwick, (5) 135; April meeting, and new officers of, (6) 167; Nov. meeting of, (11) 317; officers of, (3) 79; summary of work of, (4) 109; summer outing of, (8) 209.
Northern Ohio: need of organization of, (4) 109.
Pacific-Northwest: Annual Meeting of, (5) 135; Minton, C. R., speaker at, (11) 317; new officers of, (6) 168; summary of work of, (4) 109.
Pittsburgh: April meeting, Nadai, A., speaker at, (6) 168; Jan. meeting of, Insley, H., at, (2) 48; March meeting, Henry Leighton paper at, (4) 112; meeting at State College, Pa., program for, (9) 230; officers, 1933–34; Dec. meeting, Nov. Meeting; lectures by A. Silverman, C. H. Herty, Jr., (1) 21; officers nominated for 1935, (12) 349; C. D. Spencer at, (11) 317; summary of work of, (4) 109.

Magnetic separator, Johnson, for classifying ceramic materials, (5) 126.
Malleable glass. See *Glass.*
Manion, L. W. See *Necrology.*
Manufacturers. See also *Potteries.*
Corhart Refractories Co., host to American Ceramic Society, (3) 76.
Corning Glass Works, G. V. McCauley's work on 17-ft mirror, (4) 93–95, (6) 172; glass production at, types of, (11) 308.
Federal Glass Co., glass exhibit from, for offices of American Ceramic Society, (5) 132.
feldspar plants and story of, in N.C., (3) 64.
Ferro Enamel Corp., annual enameling school course, (4) 114; Ferro Training Course postponed, (5) 143.
Frigidaire plant, Enamel Div. visit at; photo of members visiting, (3) 75.
Harbison-Walker Refractories Co., research problems at, (7) 188.
Homer Laughlin China Co., ovenserve ware of, for offices of American Ceramic Society, (5) 132.
Hommel, O., Co., fellowship on enamels at Mellon Inst., (3) 80; W. J. Baldwin research fellow at, (11) 24.
Lava Crucible Co., refractories research problems at, (7) 189.
Newport Rolling Mill, and Andrews Steel, Society plant visit to, (3) 77.

Manufacturers (*continued*)
Norton Co., refractories research problems at, (7) 188.
Owens-Illinois Glass Co., exhibit at Century of Progress, (5) 144.
Pacific Clay Products Co., Refractories research problems at, (7) 189.
Standard Sanitary Mfg. Co. (Louisville Works), photo, (1) 20.
Timken Steel and Tube Co., refractories research problems at, (7) 189.
U. S. Steel Corp., refractories research problems at, (7) 189.
Vitrefrax Corp., T. S. Curtis terminates work with, (8) 215; errata, (10) 289.
Marburg, Edward, Lecture, water as an engineering and industrial material by S. T. Powell, (6) 173.
Masonry, reinforced brick, outline of work of Research Board for, (7) 179.
walls, water-tightness of, (12) 329.
weather resistance of, in Europe, (12) 328.
Massachusetts Institute of Technology. See *Ceramic schools.*
Mechanics, applied, new journal on, (11) 326.
Medals. See *Awards.*
Meetings, American Ceramic Society, Annual: president's review of data for, (2) 34, (2) 37.
Buffalo (37th, 1935): Comm. Chairmen for, and floor plan of Statler Hotel, (6) 164; Mr. and Mrs. Bown on Comm., errata on, (7) 192; Executive Comm. and plans for, (10) 285–86; attractions, (12) 344; plant trips, (12) 345; committees for, (12) 345.
Cincinnati (36th, 1934), Day and Morey lectures announced, (1) 17; program schedule, hotel room assignments; ladies entertainment; Newport Rolling Mill and Andrews Steel Co., trips; ceramic "ruckus," (1) 16; Art. Div., program outline, (1) 5; Louisville trip, schedule; photo of Standard Sanitary Mfg. Co., Louisville Works, (1) 20; editorial on program for, (3) 58; group photo of Local Comm., and program contributors, (3) 67; remarks of R. Walters, president Univ. of Cincinnati, (3) 67; analysis of papers on, by editor, (3) 75; Louisville, trip, Corhart luncheon, (3) 76; student reception at, list of students attending, (3) 77; plant trip to Newport Rolling Mill and Andrews Steel Co., (3) 77; plant trip to Frigidaire plant, photo, (3) 75–76; how money was spent at, (4) 112; letters on from C. W. Parmelee and P. D. Helser, (5) 131.
American Ceramic Society and Electrochemical Society (April, 1934): schedule for trips, (2) 47; feldspar plants to be visited, (3) 64; preliminary program of, (3) 66; at Asheville, program for, (4) 102–104.
A.S.T.M., 37th, Annual, program for, (6) 173.
Annual Mineral Industries Conference at Univ. of Ill., program for, (4) 114.
Ceramic Assn. of N.J., June meeting of, (7) 192.
Foundry Congress, Fifth International, (10) 289.
Illinois Glass Conference, program for, (6) 167–68; photo of, (7) 192; tentative program for, (10) 290; attendance at, and program for, (11) 317.
Ohio Ceramic Industries Assn., Refractories Div. meeting of, (7) 192; Whitewares and Heavy Clay Products Div., (4) 114.
technical, effective presentation of papers at, advice for, (11) 316.
Mellon Institute. See *Research laboratories.*
Melt, defined, (12) 340.
Melting point, defined, (12) 340.
Members, Charter, appreciation of Life Membership in Society; Life Certificates from Society, ceremony for, (3) 63.
Corporation, benefit of Society to, (9) 218; debt of, to Society, (9) 231; paid, in 1934, (6) 170; additional names, (8) 209.
geographic roster of, (9) 234–54.
Glass Div. meeting as source of membership prospects, (10) 284.
graphic cut for increase in, data on, (11) 318.
Honorary, Comm. on, from Fellows, (3) 63.
Life Membership in, for Charter members, ceremony for presentation of certificates, (3) 63.
Membership Comm. annual report by P. D. Helser, (3) 68.
membership drive and advertising push, letter from General Secretary, (10) 284–85. display page on record of, (12) 348.
membership renewals, (3) 69, (6) 169.
new, (1) 23, (3) 68, (4) 112, (6) 168, (7) 189, (8) 209, (9) 229, (10) 282, (11) 219, (12) 349.
offer to those who join after Aug. 1, (9) 218.
roster changes in, (4) 111, (6) 169, (7) 190, (8) 209, (10) 282, (11) 319, (12) 349.
tabular data: on increase in, (9) 230; on analysis of 1933 and 1934, (10) 284.
Metallurgy, industry, *vs.* ceramics, comparison of, (5) 117.
Metals, electric furnace, effect of barium flux on, (12) 331.
in metallurgy, use of, (5) 117.
Methods, J. Lawrence Smith, for alkalis in silicates, notes on, (12) 334.
Mica, mining of, in N.C., (4) 105.
Microscopes, petrographic, for crystalline substance, analyses, (10) 255.
use of, as aid to analyst, (10) 258.
Minerals, conference of mineral industries, annual meeting of, at Univ. of Ill., (4) 114.
crystalline, scheme for indentification of, (10) 256.
mica, feldspar, cyanite, silica, titanium, silica, ilmenite, ash, anthracite coal, bauxite, magnetic separation of, (5) 128.
Spruce Pine, N.C., as mining center of, (4) 104.
U.S. Bur. Mines, Yearbook on, (11) 326.
Missouri School of Mines and Metallurgy. See *Ceramic schools, School of Mines and Metallurgy, Rolla, Mo.*
Moland-Drysdale Cup. See *Awards.*
Montana State School of Mines. See *Ceramic Schools.*
Mortar joints of extruded terra cotta, (6) 161.
Mortars, expansion and shrinkage of, data on, (12) 330.
Museums, Cincinnati Art, exhibit for ceramists, (1) 6.
Metropolitan Museum of Art, American industrial design show at, (8) 216.
representative pieces of, study of, (11) 314.
Syracuse Art, Natl. Ceramic Art Award to Edgar Littlefield, (6) 172.
Toledo Museum of Art, antique glass collection of, loaned to Century of Progress, (9) 233.

National Brick Mfrs. Research Foundation. See *Societies, technical.*
Navy simulative service test for fire brick, (10) 262.
Necrology, Baumgartner, H. H., biog., (1) 25.
Bautz, R. A., biog., (1) 25.
Edgar, D. R., biog. and photo of, (4) 113.
Forst, A. D., biog., (6) 171.
Harrop, C. B., biog. and photo of, (10) 274; tribute to, and publications list of, (10) 286.
Jacobs, W. M., biog., (1) 25.
Keeler, R. B., biography, (12) 350.
Manion, L. W., biog., (3) 76.
Sinclair, J. F., biog., (11) 325.
Titsworth, P. E., biog. and photo of; tributes to, (1) 25–26.
Washburn, E. W., biog. and photo of; resolution of Fellows on passing of, (2) 49, (3) 78.
Watney, C. O., biog., (8) 216.
Wenning, W. F., photo and biog., (1) 25.
Wells, W. Edwin, biog., (5) 139.
Zwermann, C. H., biog. and photo of, (5) 139.
Neon signs, production of, (11) 309.
Newcomb Pottery. See *Potteries.*
New Jersey Ceramic Assn. See *Societies, technical, Ceramic Assn. of N.J.*
Newport Rolling Mill Co. See *Manufacturers.*
New York State College of Ceramics. See *Ceramic schools.*
Nominating Comm. See *Committees.*
North Carolina, the feldspar state, story of, (3) 64.
Northern Ohio Section. See *Local Sections.*
Norton Co. See *Manufacturers.*

Obsidian, in Yellowstone Park, composition of, (4) 89.
Official personnel. See also *Committees.*
American Ceramic Society: for 1934–35 (incomplete list), (3) 60; for 1934–35, (table), (5) 134; errata: N. W. Taylor, Refractories Div., Papers and Program Comm.; D. W. Ross, Data Comm., (5) 174; additional names for Enamel Div., (7) 189; nominations for 1935-36: Comm. A, (11) 317; Comm. B, (10) 286.
of Canadian Ceramic Society, annual meeting of, (2) 56.
of Ceramic Assn. of N.J., (1) 28.
of Comm. C-8 on Refractories, A.S.T.M., (5) 144.
of Divisions: Enamel, officers for 1935, (12) 349.
Refractories, nominations for 1935, (12) 349.
White Wares, officers for 1935, (12) 349.
See also *Committees; Divisions.*
Fellowship Comm., Education, and Awards, members of, (12) 349.
of Keramos, national, (3) 66, (11) 325.
of Local Sections: Chicago, and Chicago District Enameler's Club, (6) 167; of Michigan-Northwestern Ohio Section, (3) 79; of Pacific Northwest Section, (6) 168; of Pittsburgh Section, (1) 21; Pittsburgh nominations for 1935 officers, (12) 349.
of Natl. Brick Mfrs. Research Foundation, 1934–35 (4) 106.
of Orton Ceramic Foundation, Board of Trustees, (6) 171.
of Student Branches: Mo. School of Mines, (1) 21; N.C. State Coll., (5) 137; Ohio State Univ., (1) 26; Penn State Coll., (2) 55; Rutgers Univ., (1) 21; Univ. of N. C., (1) 21; Univ. of Washington, (2) 55.
Ohio Ceramic Industries Assn. See *Meetings: Societies, technical.*
Ontario Research Foundation. See *Research laboratories.*
Orton, Edward, Jr., portrait photo, by F. H. Haskett, (3) 62.
Orton Ceramic Foundation. See *Official personnel; Research laboratories.*
Orton Medal, resolution covering proposed medal, (3) 59–60.
Owens-Illinois Glass Co. See *Manufacturers.*
Oxidation of fired bodies, effect of de-airing on, (9) 223.

Pacific Clay Products Co. See *Manufacturers.*
Papers (titles listed): Adderson, G., effect of vacuum treatment on several Washington clays; tests of new scum eliminators, barium aluminate and barium zeolite, (5) 135.
Arrandale, J., practical tank operations, (11) 317.
Austin, J. B., and Pierce, R. H. H., Jr., reliability of measurements of thermal conductivity of refractory brick, (12) 347.
Badger, A. E., heat balance in glass tank, (11) 317.
Baernstein, M. A. (abstract), new and improved method of electric furnace technique, (4) 103
Bales, C. E., firing of clay refractories with by-product coke oven, (12) 347.
Birch, R. E., forsterite and other magnesium silicates as refractories, (12) 347.
Bognar, E. J. (abstract), classification of insulating refractories, (4) 103.
Bole, G. A., method for de-airing a dry press, (10) 290.
Brackett, F., color in glass and photo-technical deterioration, (6) 167.
Brown, W. F., flat glass, (8) 205.
Budnikoff, P. P., and Pines, B. J., spalling of magnesite brick, (12) 347.
Burch, O. G., methods for determining soda-lime glasses, (8) 205.
Burress, D. D., batch constituents and effect on durability of glass, (11) 317.
Callen, A. C., desirable investigations in use of Ill. coals for domestic purposes, (4) 114.
Carruthers, J. L., load test furnace, (12) 347.
Chancellor, W. C., application of statistical methods to solution of metallurgical problems in steel plant, (6) 173.
Chesters, J. H., and Parmelee, C. W., expansion measurements on chromite and allied spinels, (12) 346.
Christman, H. M. and Orwick, H. R., future furnaces and their refractories, (5) 135.
Clark, G. L., application of X-ray research in glass industry, (1) 27, (11) 317.
Clark, W. M., problems and perplexities in the glass industry, (11) 317.
Cole, S. S., conversion of quartz into cristobalite below 1000° C and some properties of cristobalite formed, (12) 347.
Connor, C. C., resultant separation crack-

Papers, Connor (*continued*)
ing between various mortars and brick in existing brick structures, (6) 173.
Cunliffe, J. A., problems in firing of common brick kilns with wood, (5) 135.
Curtis, T. S., photocolor process for ceramic ware decoration, (12) 347.
Darrah, W. A., fuels and combustion, (1) 27.
Dodge, H. F., acceptance-rejection requirements in specifications, (6) 173.
Durbin, E. A., microscopic study of olivine and serpentine refractories, (10) 290.
Engle, R., geology and clay deposits of the Elsinore Region, (6) 167.
Everhart, J. O., de-airing a sewer-pipe press; metal wear investigation, (10) 290.
Fabianic, W. L., microscopic control of particle size in refractory manufacture, (12) 347.
Filippi, H., reinforced brick masonry in residence construction, (4) 114.
Flint, F. C., glass containers, (8) 205.
Gregorius, J. S., measurement of chemical durability of flat glass, (8) 205.
Grim, R. E., clays and shales, (4) 114.
Guyer, E. M., surface electrical properties of glass in relation to chemical durability, (8) 205.
Heindl, R. A., and Pendergast, W. L., modulus of elasticity at several temperatures of some refractories of varying silica content, (12) 347.
Henness, C. F., relation of natural gas to glass industry, (11) 317.
Jasper, M. W., talc and soapstone in the Skagit River Val., (5) 135.
Kahn, J., ceramics as related to modern architecture, (7) 192.
Klumpp, J., Jr., fuel oil *vs.* producer gas in glassmelting, (11) 317.
Knapp, R. T., apparatus for recording size distribution of fine particles, (6) 167.
Kruger, G. H., refractories, viewpoint of a consumer, (5) 135.
Lasier, E. L., plan, purpose, and accomplishment of education bureau of Porcelain Enamel Inst., (10) 290.
Leighton, H., refractory white clays of Pa., (4) 112.
Loomis, G. A., new lining compound, (10) 290.
Markert, F. S., firing and development of enamel furnaces, (1) 27.
Mattson, V. L. (abstract), progress in commercial development of kyanite in south Atlantic states, (4) 102.
McBurney, J. E., combustion of natural gas in glass furnace, (11) 317.
McCaughey, W. J., microscopic methods used in study of refractories, (10) 290.
McCormick, R. B., methods of refractive index determination, (12) 347.
McMullen, C., Turner, A. A., and Easter, G. J. (abstract), study of resistance of fused refractory materials to metallurgical slags, (4) 103.
Melton, R. L., Brownell, K. W., and Easter, G. J. (abstract), effect of moisture on electrical leakage through typical resistor embedding cements, (4) 103.
Moore, D. G., and Hursh, R. K., effect of fused alumina and boron oxide on plastic fire clays, (12) 346.
Morey, G. W., chemical durability of glass and methods for its measurements, (8) 205.
Nold, H. E., what the Ohio Ceramic Industries Assn. has to offer an enameler's section, (10) 290.
Palmer, L. A., and Parsons, D. A., permeability tests of 8-in. brick wallettes, (6) 173.
Parmelee, C. W., ceramic products, (4) 114.
Parmelee, C. W., and Leighton, M. M., mineral construction resources and products of Ill., (4) 114.
Pearce, C. S., should Ohio enamelers meet for discussion of problems, (10) 290.
Phelps, S. M., Cartright, V., and Petrie, E. C., effect of furnace-gas pressure on behavior of refractories, (12) 347.
Pole, G. R., kinetics of reactions between solid carbonates and silica or mullite, (12) 347; weathering of terra cotta, (5) 136.
Poste, E. P., enamel tests, (1) 27.
Powell, S. T., water as an engineering and industrial material (9th Edward Marburg lecture), (6) 173.
Reed, F. H., insulating materials, (4) 114.
Richardson, H. K. (abstract) casting of thoria crucibles, (4) 103.

Papers (*continued*)
Riddle, F. H., and Peck, A. B., effect of repeated firing on specific gravity and microstructure of some aluminum silicate minerals, (12) 346.
Ries, H., on some aspects of clay research, (12) 347.
Rogers, G. L., new Navy simulative service test, (5) 135.
Rueckel, W. C., effect of de-airing stiff-mud and dry-press bodies for clay products manufacture, (6) 174; fillers for brick roads, (10) 290; physical properties of insulating refractories, (4) 103.
Shank, J. R., pulverized shale or clay in low-strength mass concrete, (10) 290.
Sharp, D. E., time factor in tests of the chemical durability of glass, (8) 205.
Smith, E. L., which way the enameling industry, (10) 290.
Sovereign, H. E., diatomite of Washington and possible uses, (5) 135.
Taylor, W. C., methods for determining special types of chemical durability; miscellaneous glass products, (8) 205.
Templin, R. L., fatigue properties of light metals and alloys, (6) 173.
Thurman, J. T., demonstration in art of "throwing" stoneware pottery, (5) 135.
Turner, W. E. S., proposed standard test for determination of chemical durability of glass; chemical durability of glass bottles, (8) 205.
Uhrmann, C. J., use of cullet, (11) 317.
Vaughan, W. H., on physical and pyrochemical properties of flint kaolin, (12) 347.
Vogdes, J., new applications of reinforced brick masonry, (7) 192.
Watson, F. R., research in sound insulation, (4) 114.
Watts, A. S., symposium on spit-out, (10) 290.
Wejnarth, A., current-conducting properties of slag baths at electric furnaces, (4) 103.
Willard, A. C., and Kratz, A. P., research in heating, ventilating, and air-conditioning, (4) 114.
Withey, M. O., tests on reinforced brick masonry columns, (6) 173.

Personnel of Committees. See *Committees; Divisions; Official personnel.*
Petrography, indentification of crystalline substances by means of, (10) 255; immersion oils for, and other materials, needs of the petrographer, (10) 259; mounting media for, (10) 260; thin section and immersed grain, (10) 259.
Phase equilibrium diagrams, large-scale, (4) 109.
Phase-rule diagrams. See also *Equilibrium diagrams.*
methods for, (10) 257.
Photocolor process for ceramic ware, (12) 347.
Photographs, American Ceramic Society officers: W. K. McAfee, R. C. Purdy, J. M. McKinley, H. B. Henderson, (3) 59.
Austin, C. R., (5) 143.
Bopp, H. F., (1) 6.
Carder, F. R., (1) 5.
Cincinnati Local Comm., and program contributors; H. F. Bopp, R. B. Carothers, S. E. Eldridge, Frederick Carder, R. A. Weaver, Mrs. R. B. Carothers, L. E. Barringer, and J. C. Hostetter, (3) 67.
Chesters, J. H., (2) 52.
Curtis, T. S., (12) 347.
Edgar, D. R., (4) 113.
feldspar plants in N. C., (2) 47–48.
Geophysical Laboratory, (1) 17; apparatus at, (1) 19–20.
Gillett, H. W., (2) 49.
Glass conference at Univ. of Ill., (7) 192.
Glass Div. Summer Meeting members, (10) 287.
glass sword for J. C. Hostetter, (4) 111.
Green, A. P., (1) 28.
Harrop, C. B., (10) 171.
Henry, F. R., (1) 15.
Horak, William, (2) 52.
Kraner, H. M., (1) 15.
Levitt, W. T., (2) 56.
Lindemann, W. C., (4) 106.
McCauley, G. V., (6) 172.
N.Y. State College of Ceramics, graduating class (1934), (5) 138.
Ohio State Univ., Dec. ceramic graduates of, (2) 55.
Orton, Edward, Jr., portrait by F. H. Haskett, (3) 62.

Photographs (*continued*)
Penn State Student Branch of American Ceramic Society, (5) 136.
Philhower, C. A., (2) 49.
Rhead, F. H., (4) 106.
Ries, H., (12) 347.
Society members at Frigidaire plant trip, (3) 75; E. R. Godfrey, R. R. Danielson, B. T. Sweely, and E. B. Newill, at Frigidaire plant, (3) 76.
Sosman, R. B., (4) 106.
Standard Sanitary Mfg. Co., Louisville Works, (1) 20.
Titsworth, P. E., (1) 26.
Waggoner, J. H., (3) 80.
Washburn, E. W., (3) 78.
Weaver, R. A., (1) 6.
Wenning, J. W., (1) 25.
Wilkes, G. B., (2) 52.
Willard, A. C., (5) 143.
Woodward, Ellsworth, (5) 141.
Zwermann, C. H., (5) 139.
Pipes, sewer. See *Clayware.*
Polariscopes, note on history and use of, (5) 122.
Porcelain, glass phase in, (6) 162.
varieties of, definitions of, (5) 131.
Potteries, Haeger, at Century of Progress, (5) 144.
Newcomb: exhibit of ware from, for offices of American Ceramic Society, (5) 132; history and story of, (5) 140–42.
Rookwood, historical sketch of, (1) 8.
Shearwater, exhibit of pottery from, for offices of American Ceramic Society, (5) 132.
Pottery, ancient glazed, history, (11) 297.
bronze age, in Greece, (11) 301.
Edgar Littlefield awarded prize at National Ceramic Exhibition, Syracuse Art Museum, (6) 172.
glazing of, in ancient Seleucia, (11) 293.
Grecian, in bronze age, photographs of, (11) 302–308.
Indian, at Century of Progress, (5) 144.
Parthian, description of, (11) 297.
Persian, book by A. U. Pope, (5) 144.
and porcelain, American, display by Iowa Federated Women's Clubs, (4) 113; study group for, sponsored by Mrs. Orton, (4) 114.
the Potter's Art, by Cipriano Piccolpasso, (6) 174.
potters' wheel for, ancient, (11) 298.
practical courses in, at W. Va. Univ., (6) 168.
Presses, filter, high-pressure continuous, and press, (2) 42.
Publications, American Ceramic Society, advertising in. See *Advertising,* American Ceramic Society.
The Bulletin, format changes in, (2) 49–50; Nov. issue, letters from J. C. Hostetter, D. E. Sharp, V. V. Kelsey, (12) 343; procedure for papers in, (4) 108.
Ceramic Abstracts, procedure for, (4) 108.
Ceramic Abstracts and Index, value of, (9) 231; costs of, and data on value of, (10) 285; fundamental data in, recommendation for, (3) 61; importance of, (9) 231.
Journal, editing and Comm. review of papers, (4) 107.
Journal and *Ceramic Abstracts,* new format for, comments on, (2) 48, (2) 50; intrinsic value of, (9) 217; and *The Bulletin,* offer to those who join after Aug. 1, (9) 218.
president's review of, (2) 36.
Ceramic Catalog on Equipment and Materials, 7th edition, (10) 261.
ceramic trade papers, importance of, to ceramic progress, (10) 261.
Chemical Abstracts, new format of, (2) 56.
Journal of Applied Mechanics, new, (11) 326.
Referatkartei der Silikatliteratur, abstracts of silicate literature, (6) 174; errata, (8) 216.
Verre et Silicates Industriels, formerly *Revue belge des Industries Verrières Céramiques et de l'Emaillerie,* (5) 143.
Pyrometric cone equivalent (P.C.E.), defined, (12) 342.

Rays, Röntgen, diffraction patterns, use of, in identification of crystalline minerals, (10) 256.
Referatkartei der Silikatliteratur. See *Publications.*

Reflection, light, factors in, defined, (9) 222.
Refraction, indices of, measurement of, (10) 259.
Refractories, A.S.T.M. Comm. C-8, activities of, revisions and report of, (5) 144; A.S.T.M. specifications for refractoriness test, (10) 262.
book on properties and uses of, suggested, (7) 188.
clays, idealized geologic column for, (7) 188.
fire brick, Navy simulative service tests on, (10) 262.
fireclay brick: method for test for softening point of, (C92–32T) A.S.T.M., (5) 144; on spalling of, method withdrawn, (5) 144.
heat flow through furnace walls, (7) 188.
heat transfer in, symposium on, (3) 67.
papers for joint meeting of Society and Electrochemical Soc., (4) 102–104.
particle size of ground materials, method for test for (C92–32T), A.S.T.M., (5) 144.
properties of, related to use, (7) 188.
research on, in 1933, report of Refractories Div. Comm. on, (7) 188.
silica brick, barium-bonded, (12) 331.
spalling of, Navy test and Mellon Inst. test, (10) 263.
systems in, rate phenomena studies in, symposium for 1935 Meeting, (11) 323.
Refractories apparatus, problems in, (7) 188.
Refractory systems, factors affecting rates of change in, outline of symposium on, (12) 346.
Reinforced Brick Masonry Board. See *Societies, technical.*
Research, ceramic, product development and promotion as work of, (8) 214; profits of Orton Memorial Foundation for research at Ohio State Univ., (8) 214.
general, benefit of, to Society Corporation members, (9) 218.
Geological Surveys, work of each state on, (2) 50–52.
Mayor La Guardia cited on, (1) 30.
problems at Ohio State Univ., Eng. Expt. Station, list of, (11) 324.
in refractories, problems being studied, (7) 188.
on reinforced brick masonry, outline of work of Board on, (7) 179.
on tableware, value of, (6) 153.
on thermal history of Iowa clays, F. B. Hodgdon, fellowship for, (11) 322.
Research laboratories, Battelle Memorial Inst.: C. R. Austin at, (5) 143; C. E. Williams, director, (6) 172.
Bucknell Univ., refractories research problems at, (7) 189.
Bureau of Standards: American Ceramic Society urges support of, (6) 168; Industrial Advisory Comm. on Whiteware to, minutes of meeting of, (8) 212; prestige of, despite fund cut, (5) 142; refractories research problems at, (7) 188.
Carnegie Inst. of Technology, refractories research problem at, (7) 188.
ceramic, in China, T. H. Shaw director of, (9) 233.
Curtis Research Laboratory, work of, photo of lab., (8) 215; errata, (10) 289.
Geophysical Laboratory, research work on optical glass, history of, (4) 91–93.
Mellon Institute: refractories research problems at, (7) 189; research on frits and enameling, (3) 80; spalling test of, (10) 263.
Ohio State Engineering Experiment Station, fellowships at, (11) 324.
Ontario Research Foundation: refractories research problems at, (7) 189.
Orton Ceramic Foundation: editorial on establishment and purposes of, (6) 145; fellowships at, R. F. Rea and C. J. Koenig, (11) 324; inaugurates research at, (6) 171; profits of, in research, (8) 214.
on studies on chemical durability of glass, (11) 319–20.
Rheology, Society of. See *Societies, technical.*
Roofing tile. See *Clayware.*
Rookwood Pottery, historical sketch of, (1) 7.

Saggers, bodies, Lawrence Co., Ohio, clay in, effect of refiring on, (12) 327.
Saturation temperature, definition of, (12) 341.
Scumming of ceramic ware, relation of, to sulfur in coal, (7) 176; classification of, (1) 22.
Separating apparatus, Johnston induction magnetic separator for, use of, (5) 126; Rowand-Wetherill separator, (5) 127.
Separation of ceramic materials, types of, and process of magnetic separation, (5) 128–29.
Sewer pipe. See *Clayware.*
Shearwater Pottery. See *Potteries.*
Short Courses, clay products: Iowa State Coll., list of lectures, (1) 27; Univ. of Ill., (1) 27.
Enamel, Univ. of Ill., (1) 27.
Shrinkage of fired bodies, effect of de-airing on, (9) 223; of mortars, discussion on, (12) 330.
Silica brick, barium-bonded, (12) 331.
Silicate literature, abstracts on, (6) 172.
Silicates, alkalis in, J. Lawrence Smith method for, notes on, (12) 334.
in the ceramic industry, use of, (10) 265.
dissociation of, (10) 257.
molten, lava lake of Kilauea, (4) 89; Mauna Loa volcanic eruptions on, (4) 89.
natural and artificial, (4) 85.
reactions in, (10) 258.
terminology of, standardization of, errata, (6) 174; errata, (8) 216.
Silicosis, annual report of M. A. Daly, lawsuits, compensation, insurance costs, (8) 213–14; bibliography on, (6) 174; compensable under act in N.Y., (5) 143.
Sinclair, J. F. See *Necrology.*
Sinter, sintering, defined, (12) 343.
Slagging of fuel-oil ash, action of, (2) 45.
Slags, barium flux in, use of, (12) 331.
Smith, J. Lawrence, test. See *Methods.*
Societies, technical, American Assn. for Advancement of Science, offer to American Ceramic Society members, (4) 112.
American Chemical Society, suggestions for presentation of papers at meetings, (11) 316.
American Federation of Art, meeting of, (7) 186.
American Institute of Chemical Engineers, J. C. Hostetter speaker at, (12) 350.
American Society for Testing Materials, 37th Annual Meeting of, program for, (6) 173.
American Standards Assn., symbols for fluid measurements, (7) 190–92.
Canadian Ceramic Society: annual meeting of, officers, (2) 56; at Buffalo meeting, (8) 211.
Ceramic Assn. of N. J., June meeting of, (7) 192.
Electrochemical Society, joint meeting with American Ceramic Society, program and papers at, (4) 102–104.
Études des Composes Siliceux, work and publications of, (5) 143.
Foundry Congress, 5th International meeting of, (10) 289.
Illuminating Engineering Soc., Illuminating Glassware Guild, and Joint Comm. on Illuminating Glasses of Glass Div. of American Ceramic Society, report of, (9) 219–23.
International Comm. for Glass Technology: problems for, discussed at Glass Div. meeting, (8) 205; purposes of, (8) 206; "weathering" of glass as first problem for, (8) 206; J. C. Hostetter, American representative on, (11) 319.
Iowa Clay Products Mfrs., tests on effect of thermal history on Iowa clays in, firing, (10) 280.
Natl. Brick Mfrs. Research Foundation, official personnel of, (4) 106.
Ohio Ceramic Industries Assn.: Whitewares and Heavy Clay Products Div. meetings, (4) 114, (5) 137; fall meeting of Assn., (10) 290; refractories research problems of, (7) 188.
Reinforced Brick Masonry Research Board of brick associations, outline of work of, (7) 179.
Society of Rheology, meeting of, (8) 216.
Soda-lime glass. See *Glass.*
Sodium silicates, use of, in the ceramic industries, (10) 264.
Softening, defined, (12) 341.
Softening point or deformation point, defined, (12) 341.
Solubility of soda-lime glasses, method for determination of, (8) 200.
Spark plugs, spraying machines for, (5) 125.
Specifications, A.S.T.M. for refractoriness test, (10) 262.
refractories, Navy spalling test and Mellon Institute test, (10) 263.
Spraying apparatus, circular and straight-line conveyer for, (5) 123.
Steele, J. C., Scholarship Cup. See *Awards.*
Studios, N.Y. Ceramic Studios, organization of, (1) 28; W. P. Suter on staff of, (5) 143.
Vollkommer, H. E., in Calif., (1) 29.
Sulfur in coal firing, relation of, to scum, (7) 176; in kiln firing, removal of, (8) 196.
Symbols for fluid measurements, American Stand. Assn., (7) 190.
Symposiums on ceramic education, by A. F. Greaves-Walker, P. E. Cox, R. B. Montgomery, W. A. Hull, F. W. Preston, F. H. Riddle, and H. M. Kraner, (3) 71–74.
enamel, papers on, (1) 27.
on factors affecting rates of change in refractory systems, outline of program for, (12) 346.
on glass, chemical durability and corrosion resistance of glass, (8) 205.
on kiln firing, outline of, (12) 346; E. C. Clemens on thermal control in firing sewer pipe, (11) 320; thermal history of, H. R. Straight on, (9) 232; greater production economy and better ware quality suggestions, (6) 151–52; heat transfer, (3) 67; Milener, E. G., letter on, (6) 165; reply by general secretary, (6) 166; Parmelee, C. H., discussion on, (11) 320–21; Watts, A. P., discussion on, (11) 321–22; controlled, of ceramic ware, Brown, G. H., as chairman of, (9) 232; thermal treatment in, what variation is allowable and what unavoidable, (8) 194; uniform thermal treatment in, discussion by Sherman, R. A., (10) 275; Robson, J. T., (10) 276; Lovejoy, E., (10) 278–79; Richardson, W. D., (10) 279; Iowa ceramists, (10) 280.
refractory systems, rate phenomena in, studies on, (11) 323.
Syracuse Art Museum. See *Museums.*

Tableware, American *vs.* European, comparison of, (6) 153.
chinaware, types of, definitions of, (5) 131.
design in, vital considerations in, (11) 292.
hotel, American, Netherland Plaza and Illinois Central R.R. give orders for, (8) 210.
Tariff ruling on art glass, (1) 29.
Temperature, saturation; congruent melting, definitions of, (12) 341.
Terra cotta, architectural, kiln for, design of, (8) 196.
bodies of, tests for, standardization of, (12) 333.
de-airing of, effect on fired properties of, (9) 223.
handbook on construction of, (6) 159.
water-tight, construction of, (6) 154.
Thermal history and studies of kiln firing. See also *Symposiums; Firing.*
equal, letter from Lovejoy on, (7) 187; essential for uniform and definite properties of ceramic ware, (7) 175; importance of, in firing sewer pipe, (11) 320; of Iowa Clays, (11) 322; method of heating, convection, conduction, radiation, and how to obtain uniform thermal treatment, (6) 152; uniform, research on crystal structure as aid to, (7) 187; uniform, (8) 193.
Thermal shock, tests on glass bottles, (9) 228.
Thermal treatment, uniform, discussion on, (10) 275; variation in, allowable or unavoidable, (8) 194.
Thermometers, glass for, production of, (11) 310–311.
treatise on development of, (12) 335.
Tile. See *Clayware, roofing tile.*
Timken Steel & Tube Co. See *Manufacturers.*
Titsworth, P. E. See *Necrology.*
Transmission, light, factors defined, (9) 222
Tunnel kilns. See *Kilns, tunnel.*

Underglazes. See *Glazes, under-.*
U.S. Bureau of Mines, Minerals Yearbook of, (11) 326.
U.S. Steel Corp. See *Manufacturers.*
University of Alabama. See *Ceramic schools.*
University of Cincinnati. See *Ceramic schools.*
University of Illinois, A. C. Willard, new president of, (5) 143; see also *Ceramic schools.*
University of North Carolina, State College at Raleigh. See *Ceramic schools.*
University of Southern California. See *Ceramic schools.*

Ventilation, problems in, (10) 267.
Vitrefrax Corp. See *Manufacturers.*
Vitrification, defined; vitrification, incipient, or incipient fusion, defined; vitrification range, defined, (12) 342.

Walls, leaking, cause of, in terra cotta construction, (6) 154.
Washburn, E. W. See *Necrology.*
Water-smoking of fired clays, effect of de-airing on, (9) 223.
Water-tight terra cotta. See *Terra cotta.*
Watney, C. O. See *Necrology.*
Weathering of European masonry, resistance of, (12) 328-30.
Wells, W. Edwin. See *Necrology.*
Wenning, J. W. See *Necrology.*
Whiteware, bisque, composition, (2) 41.
ceramic, terminology of, (5) 131.
Whiteware bodies, auxiliary fluxes in, reasons for, (6) 162.
X-rays. See *Rays, Röntgen.*
Zwermann, C. H. See *Necrology.*

FOOTNOTE CITATIONS IN THE BULLETIN

Akam, J. W., effect of de-airing on properties of fired clays, (9) 223.
Andrae, W., colored ceramics from Ashur, (11) 295.

Baggs, A. E., and Littlefield, E., production and control of copper reds in an oxidizing kiln atmosphere, (10) 265.
Barlett, H. B., occurrence and properties of crystalline alumina in silica melts, (10) 258; zeta-alumina, (3) 80.
Baur, P. V. C., excavations at Dura-Europos, (11) 297.
Beck, H. C., glass before 1500 B.C., (11) 295.
Bigot, A., fused kaolins and bauxites, (10) 258.
Blegen, C. W., Zygouries, (11) 301.
Blümner, H., technology and terminology of Greek and Roman ware, (11) 297.
Bole, G. A., *et al.,* problems in firing of refractories, (10) 275.
Botta, P. E., and Flandin, E., monument de Ninive, (11) 296.
Bowen, N. L., and Wyckoff, R. W. G., thermal dissociation of dumortierite, (10) 258.
Brongniart, A., works on ceramic arts, (11) 297.
Brownmiller, L. B., and Bogue, R. H., beta-alumina, (3) 79.
Brunton, G., and Caton-Thompson, G., the Badarian civilization, (11) 294.

Carstens, C. W., and Kristofferson, K. R., study of petrography of magnesite brick, (10) 258.
Clarke, F. W., data of geochemistry, (10) 265.
Curtis, E. deF., course in pottery at Pa. Museum School of Industrial Art; the small shop, (11) 315.

Debevoise, N. C., Parthian pottery, (11) 297, (11) 299.
Dimbleby, V., and Turner, W. E. S., tests for glass solubility in water, (8) 201, (8) 203.

Edwards, J. D., and Tosterud, M., hydrated forms of alumina, and dehydration products of, (3) 80.
Emmons, R. C., and Williams, E. F., high index refractometer, (10) 260.
Enss, J., water solubility of glass, (8) 201.
Evans, A., ceramics of Minoan period, (9) 293.

Fenner, C. N., stability relations of the silica minerals; symposium on physical chemistry of the alumina-silica refractories, (10) 258.
Flinders-Petrie, W. M., arts and crafts of ancient Egypt, (11) 294.
Flint, F. C., and Lyle, A. K., Jr., flow of glass in tanks, (8) 203.
Frankfort, H., Tell Asmar, Khafaje, and Khorsabad, (11) 294, (11) 296.
Fry, W. H., petrographic methods for soil laboratories, (10) 257.

Galpin, S. L., studies on flint clays and their associates, (10) 257.
Goldman, H., excavations at Eutresis in Boeotia, (11) 301.
Gregory, R., science and glass industry, (12) 351.
Greig, J. W., formation of mullite, from cyanite, andalusite, and sillimanite, (10) 256, (10) 258.
Grim, R. E., petrography of fuller's earth deposits, in Ill., and study of non-Ill., earths, (10) 257.

Hall, H. R., Minoan faience in Mesopotamia, (11) 293.
Hansen, W. C., and Brownmiller, L. T., gamma-alumina, (3) 80.
Hartford-Empire Co., recommendations for thermal shock tests for bottles, (9) 228.
Heindl, R. A., thermal expansion of refractories to 1800°C, (10) 258.
Heindl, R. A., and Pendergast, W. L., fireclays, fundamental properties at several temperatures, (10) 257.
Henderson, H. B., and Caldwell, J. H., increase in refractoriness in ceramic bodies in interrupted heat treatment, (7) 188.

Insley, H., behavior of refractories in glass-melting furnaces; determination of source and means of prevention of stones in glass, (10) 258; microstructure of porcelain, (10) 258.

Jackson, F. G., descriptive bibliography of scumming and efflorescence, (7) 177; oxidation of ceramic ware during firing, (8) 196.
Jéquier, G., ancient paste beads, glazed statuettes, etc., (11) 297.
Jordan, J., glazed brick in Mesopotamia, (11) 297.

Kanolt, C. W., melting point of alpha-alumina or corundum, (3) 79.
Kleeman, R. D., use of silicates in casting ceramic ware, (10) 265.
Klein, A. A., constitution and microstructure of porcelain, (10) 258.
Knote, J. M., chemical and physical changes in clays due to influence of heat, (10) 257.
Koldewey, R., excavations at Babylon, (11) 296.
Kreüger, H., climatic action on exterior of buildings, Sweden, (12) 328.

Larsen, E. S., and Berman, H., microscopic determination of non-opaque minerals, (10) 257.
Lavoisier, A. L., action of water in glass, (8) 201.
Lebedev, V. I., optics and glass, (12) 351.
Littlefield, E., copper blue at cone 9, (10) 265.
Lovejoy, E. H., coal requirements of various ceramic ware in firing, (10) 275.
Lucas, A., ancient Egyptian materials, (11) 294.

Mackay, E., excavation of "A" cemetery at Kish, (11) 294, (11) 295.
Manson, M. E., sodium silicate as new enamel raw material, (10) 264.
Marshall, J., Mohenjo-Daro and the Indus civilization, (11) 294.
Mazard, H. A., study of ancient lead glazes, (11) 297.
McCaughey, W. J., mineralogical examination of clays, (10) 257.
McDowell, J. S., on mineralogy of clays, (10) 257.
McDowell, J. S., and Howe, R. M., magnesite refractories, (10) 258.
McDowell, S. J., effect of various sodium silicates and other electrolytes on clay slips, (10) 265.
McDowell, S. J., and Lee, H. C., petrographic study of slags from boiler-furnace slags, (10) 258.
McLellan, R. D., petrographic study of lead and copper furnace slags, (10) 258; use of a refractometer with variable refracting angle, (10) 260.
McVay, T. N., introductory text to optical mineralogy, (10) 256.
McVay, T. N., and Thompson, C. L., X-ray investigation of effect of heat on china clays, (10) 257.
Mecquenem, R. de, foundation of Chouchinak temple, (11) 297.
Möhl, H., microscopic investigation of ceramic raw materials, (10) 257.
Morey, G. W., glass, the bond in ceramics, (7) 188, (11) 321.

Neuburger, A., technical arts and sciences of the ancients, (11) 293, 294.
Neumann, F., stability relations of polymorphous system Al_2SiO_5, (10) 257.
Nichols, H. W., ancient Chinese pottery, (11) 300.
Nold, H. E., completion of combustion, (7) 177.
Norton, C. L., influence of time on maturing temperature of whiteware, (10) 258.
Norton, H. H., and Porter, R. L., method of selecting refractories for marine purposes of the Navy, (10) 262.

Oldfather, W. A., etymology of word "ceramics," (10) 271.
Orton, E., Jr., and Krehbiel, J. F., influence of different feldspars on "freezing" behavior of cones, (7) 188.

Palmer, L. A., properties of mortars and brick and their relation to bond, (12) 330; water penetration through brick and mortar assemblages, (6) 158.
Peck, A. B., changes in constitution and microstructure of andalusite, cyanite, and sillimanite at high temperatures, (10) 257; effect of time and temperature on microstructure of porcelain, (10) 258; dumortierite as commercial mineral; behavior of unstable or monotropic forms in system alumina-silica and related systems, (10) 257.
Phelps, S. M., study of shrinkage of diaspore clays, (10) 258.
Phelps, S. M., Swain, S. M., and Ferguson, R. F., service spalling test for refractories, (10) 263.
Pollock, S. H., and Tait, L. G., ceramics at Sebring high school, (10) 271.

Rankin, G. A., and Merwin, H. E., beta-alumina, (3) 79.
Rhode, I., and Harkort, H., microscopic examination of ceramic raw materials and fired products, (10) 258.
Rice, W. E., properties of coal in ceramic industry, (7) 176.
Richter, G. M. A., glazes in Greece and Italy, (11) 293.
Riddle, F. H., and Peck, A. B., an 18 months' high-temperature test on refractory test specimens, (10) 258.
Rogers, G. L., simulative test furnace for comparative tests of fire brick, (10) 262.
Ross, C. S., and Kerr, P. F., kaolin minerals; the clay minerals, (10) 257.
Ross, C. S., and Shannon, E. V., minerals of bentonite and related clays, (10) 257.
Ruff, O., and Schmidt, P., boiling point of alpha-alumina or corundum, (3) 79.

Sarre, F., ceramics of Samarra, (11) 297.
Schaffer, R. J., weathering of natural stone buildings, (12) 328.
Scheele, G. A., action of water on glass, (8) 201.
Schurecht, H. G., microscopic examination of the mineral constituent of some American clays, (10) 257; terra cotta and glaze tests, (12) 333.
Seil, G. E., petrography and heat treatment of refractories, (10) 258.
Shannon, E. V., notes on mineralogy of three gouge clays from precious metal veins, (10) 257.
Sherman, R. A., combustion in kilns burning refractory ware, (10) 275.
Short, M. N., examination of ore minerals, (10) 256; microscopic determination of the ore minerals, (10) 257.
Simpson, H. E., investigation of action of coal-ash slags on fire brick by microscopic methods, (10) 258.
Slawson, C. B., objective with variable diaphragm, (10) 260; quantitative

optical determination of sodium and potassium chlorides, (11) 259.

Smith, K. E., and Stevens, W., underglaze color crayons, (2) 40.

Somers, R. E., microscopic examination of clays, (10) 257.

Sosman, R. B., fundamental principles governing corrosion of a fireclay refractory by a glass, (10) 258; properties of silica, (10) 257.

Taylor, N. W., reactions between solids in absence of liquid phase, (7) 188.

Thomas, M., determination of durability of glass by powder methods, (8) 201, (8) 203.

Thompson, R. C., chemistry of the ancient Assyrians, (10) 265, (11) 296.

Trostel, L. J., petrographic methods applied to ceramic research, (10) 258.

Unvala, J. M., three panels from Susa, (11) 297.

Walters, H. A., history of ancient pottery, (11) 297.

Westman, A. E. R., thermal expansion of fireclay brick, (11) 257.

Winchell, A. N., microscopic characters of artificial inorganic solid substances or artificial minerals, (10) 259.

Woolley, L. C., excavations at Ur, (11) 295.